

Having described the invention, the following is claimed:

1. A visual programming system for generating custom processing logic, the system comprising:
  - means for selecting components from a group of components, wherein each component has associated properties, each selected component displayed in a design region;
  - means for defining the properties associated with each selected component;
  - means for linking the selected components to form one or more logic strings, said logic strings defining a control flow sequence;
  - means for generating from said control flow sequence at least one of: source code, executable code and a dynamically linked library (DLL); and
  - a global data store for storing data associated with each component of the control flow sequence, wherein each component of the control flow sequence shares their respective data with the other components through the global data store.
2. A visual programming system according to claim 1, wherein said group of components includes a component for generating a notification message.
3. A visual programming system according to claim 2, wherein said notification message includes the value of a variable in the control flow sequence.
4. A visual programming system according to claim 2, wherein said notification message is an electronic mail message sent to at least one electronic mail address.
5. A visual programming system according to claim 4, wherein said electronic mail message includes at least one file attachment.
6. A visual programming system according to claim 1, wherein data stored in said global data store is stored as a data object, each data object having an associated (a) data type field for identifying the type of data stored as the data object, (b) data name field for identifying a name for the data stored as the data object, and (c) reference

count field for identifying the number of components that reference the associated data object.

7. A visual programming system according to claim 1, wherein said group of components includes at least one component for expert system decision logic.

8. A visual programming system according to claim 1, wherein said system further comprises means for examining the logic strings defining the control flow sequence, to map each component to a source code syntax and generate source code.

9. A visual programming system according to claim 8, wherein said system further comprises means for compiling the source code to generate at least one of executable code and a dynamically linked library (DLL).

10. A visual programming system according to claim 1, wherein said group of components includes at least one Function component, said Function component used in connection with at least one of: a Sequential Optimizer application, a Combustion Optimization System (COS) application, a PerfIndex application, a Smart Sootblowing application, and a Intelligent Sootblowing application.

11. A visual programming method for generating custom processing logic, the method comprising:

selecting components from a group of components, wherein each component has associated properties, each selected component displayed in a design region;

defining the properties associated with each selected component, wherein data associated with each component of the control flow sequence is stored in a global data store, each component of the control flow sequence sharing their respective data with the other components through the global data store;

linking the selected components to form one or more logic strings, said logic strings defining a control flow sequence; and

generating from said control flow sequence at least one of: source code, executable code and a dynamically linked library (DLL).

12. A visual programming method according to claim 11, wherein said group of components includes a component for generating a notification message.
13. A visual programming method according to claim 12, wherein said notification message includes the value of a variable in the control flow sequence.
14. A visual programming method according to claim 12, wherein said notification message is an electronic mail message sent to at least one electronic mail address.
15. A visual programming method according to claim 14, wherein said electronic mail message includes at least one file attachment.
16. A visual programming method according to claim 11, wherein data stored in said global data store is stored as a data object, each data object having an associated (a) data type field for identifying the type of data stored as the data object, (b) data name field for identifying a name for the data stored as the data object, and (c) reference count field for identifying the number of components that reference the associated data object.
17. A visual programming method according to claim 11, wherein said group of components includes at least one component for expert method decision logic.
18. A visual programming method according to claim 11, wherein said method further comprises the step of examining the logic strings defining the control flow sequence, to map each component to a source code syntax and generate source code.
19. A visual programming method according to claim 18, wherein said method further comprises the step of compiling the source code to generate at least one of executable code or a dynamically linked library (DLL).
20. A visual programming method according to claim 11, wherein said group of components includes at least one Function component, said Function component used in connection with at least one of: a Sequential Optimizer application, a Combustion

Optimization System (COS) application, a PerfIndex application, a Smart Sootblowing application, and a Intelligent Sootblowing application.

21. A control system for an electricity generating power plant, comprising:
- a central control system;
  - a plurality of sensing devices for sensing operating conditions and parameters associated with the power plant;
  - an optimization computer system for optimizing at least one power plant process; and
  - a visual programming system for programming the optimization computer system, said visual programming system comprising:
    - (a) means for selecting components from a group of components, wherein each component has associated properties, each selected component displayed in a design region,
    - (b) means for defining the properties associated with each selected component,
    - (c) means for linking the selected components to form one or more logic strings, said logic strings defining a control flow sequence,
    - (d) means for generating from said control flow sequence at least one of: source code, executable code and a dynamically linked library (DLL), and
    - (e) a global data store for storing data associated with each component of the control flow sequence, wherein each component of the control flow sequence shares their respective data with the other components through the global data store.
22. A control system according to claim 21, wherein said group of components includes a component for generating a notification message.
23. A control system according to claim 22, wherein said notification message includes the value of a variable in the control flow sequence.
24. A control system according to claim 22, wherein said notification message is an electronic mail message sent to at least one electronic mail address.

25. A control system according to claim 24, wherein said electronic mail message includes at least one file attachment.
26. A control system according to claim 23, wherein data stored in said global data store is stored as a data object, each data object having an associated (a) data type field for identifying the type of data stored as the data object, (b) data name field for identifying a name for the data stored as the data object, and (c) reference count field for identifying the number of components that reference the associated data object.
27. A control system according to claim 21, wherein said group of components includes at least one component for expert system decision logic.
28. A control system according to claim 21, wherein said system further comprises means for examining the logic strings defining the control flow sequence, to map each component to a source code syntax and generate source code.
29. A control system according to claim 27, wherein said system further comprises means for compiling the source code to generate at least one of: executable code and a dynamically linked library (DLL).
30. A control system according to claim 21, wherein said optimization computer system includes at least one of: a Sequential Optimizer application, a Combustion Optimization System (COS) application, a PerfIndex application, a Smart Sootblowing application, and a Intelligent Sootblowing application, said group of components includes at least one Function component, said Function component used in connection with at least one of: the Sequential Optimizer application, the Combustion Optimization System (COS) application, the PerfIndex application, the Smart Sootblowing application, and the Intelligent Sootblowing application.